

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A ~~mechanical~~-device comprising:
a first mechanical resonator; and
a second mechanical resonator electrostatically coupled to the first mechanical resonator
wherein the electrostatic coupling is controlled by a voltage.
2. (Original) The device of claim 1 wherein the device acts as a frequency selective filter, a frequency converter or an amplifier.
3. (Original) The device of claim 1 wherein the device acts as a detector of applied force or a detector of mass collected on one of the resonators.
4. (Original) The device of claim 1 wherein the first and second resonators comprise oxide buried beneath single crystal silicon.
5. (Original) The device of claim 4 wherein the first and second resonators are approximately 1 μm thick.
6. (Original) The device of claim 4 wherein the first and second resonators comprise paddles having wirebonded contact wires coupled thereto.
7. (Original) The device of claim 1 wherein the first and second resonators comprise torsional resonators positioned in close proximity.
8. (Original) The device of claim 7 wherein the torsional resonators comprise paddles suspended by narrow beams.

9. (Currently Amended) The device of claim 1 and further comprising:
a laser positioned to project light onto at least one of the mechanical resonators; and
a photo receiver positioned to receive light reflected from the at least one of the mechanical resonators.
10. (Original) The device of claim 9 wherein the mechanical resonators are selected from the group consisting of cantilevers, double-supported beams, drum-like membranes, torsional and translational resonators.
11. (Currently Amended) The device of claim 9 wherein the ~~amplifier~~ device provides amplification of signals in cell phones, from magnetic force imaging apparatus, satellite communication, radars and radios.
12. (Currently Amended) The device of claim 9 wherein the ~~amplifier~~ device comprises a portion of a device selected from the group consisting of chemical sensors, magnetic sensors, electric field sensors, light sensors, atomic force microscopes, and thermal sensors.
13. (Original) The device of claim 1 and further comprising means for sensing motion of a resonator.
14. (Original) The device of claim 13 wherein the means for sensing motion of a resonator senses such motion by detecting changes in capacitance.
15. (Currently Amended) A mechanical device comprising:
a first mechanical resonator having a first resonant frequency;
an input signal applied to the first resonator about the first resonant frequency;
a second mechanical resonator electrostatically coupled to the first mechanical resonator,
wherein the second mechanical resonator has a second resonant frequency; and

a pump, coupled to the second mechanical resonator for providing a signal based on the sum of the input signal and a second signal close to the second resonant frequency.

16. (Original) The device of claim 15 and further comprising an optical detector that generates a signal representative of oscillation of the first resonator.
17. (Currently Amended) The device of claim 16 and further comprising:
a laser positioned to project light onto at least one of the mechanical resonators; and
a photo receiver positioned to receive light reflected from the at least one of the mechanical resonators.
18. (Original) A method of processing an AC input signal, the method comprising:
applying the input signal to a first mechanical resonator;
applying the input signal and a second signal to a second mechanical resonator that is electrostatically coupled to the first mechanical resonator; and
measuring movement of the first mechanical resonator.
19. (Original) The method of claim 18, wherein the second signal is approximately equal to a resonant frequency of the second mechanical resonator.
20. (Original) The method of claim 18 and further comprising sweeping the second signal about the resonant frequency of the second mechanical resonator to find a desired frequency for the second signal.
21. (Original) The method of claim 18 and further comprising modifying a resonator bias voltage.
22. (Original) The method of claim 18 and further comprising modifying a mechanical resonator to change its resonant frequency.

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23. (New) A device comprising:
a first moveable mass;
a second moveable mass electrostatically coupled to the first moveable mass; and
a pump that modifies electrostatic interactions between the first and second moveable masses.
24. (New) The device of claim 23 wherein the first and second moveable masses oscillate.
25. (New) The device of claim 24 wherein the oscillation of the first and second moveable masses is parametric.
26. (New) The device of claim 1 wherein the voltage comprises a voltage difference applied across the first and second mechanical resonators.